

What Is Claimed Is:

1. A monoclonal antibody which specifically binds to B7.1 antigen (CD80) or B7.2 antigen (CD86), and which antibody inhibits the binding of said B7.1 or B7.2 antigen to CD28.

2. The monoclonal antibody of claim 1 wherein said antibody specifically binds to B7.1 antigen (CD80).

3. The monoclonal antibody of claim 2 wherein said antibody does not inhibit the binding of B7.1 antigen to CTLA-4.

4. The monoclonal antibody of claim 1 wherein said antibody specifically binds to B7.2 antigen (CD86).

5. The monoclonal antibody of claim 4 wherein said antibody does not inhibit the binding of B7.2 antigen to CTLA-4.

6. The monoclonal antibody of claim 1 which inhibits the production of IL-2 by T cells.

7. The monoclonal antibody of claim 2 which selectively inhibits the interaction of B and T cells via the CD28/B7.1 pathway.

8. The monoclonal antibody of claim 4 which selectively inhibits the interaction of B and T cells via the CD28/B7.2 pathway.

9. The monoclonal antibody of claim 1 which is capable of inhibiting *in vitro* the production of IL-2 by T lymphocytes.

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10. The monoclonal antibody of claim 9 wherein said antibody is capable of inhibiting IL-2 production when added to a T lymphocyte containing culture at a concentration of at least 10 $\mu\text{g/ml}$.

11. A monoclonal antibody which binds to the same epitope on B7.1 as 16C10 or 7C10, or which monoclonal antibody inhibits the interaction of 16C10 or 7C10 with B7.1.

12. The monoclonal antibody of claim 1 which is a primatized antibody.

13. The monoclonal antibody of claim 1 which is a human, chimeric mouse/human, or humanized antibody.

14. The monoclonal antibody of claim 1 wherein said B7.1 is human B7.1.

15. The monoclonal antibody of claim 1 wherein said B7.2 is human B7.2.

16. A method of treating a disease involving T cell/B cell interactions comprising administering an amount of a monoclonal antibody according to claim 2 sufficient to inhibit the binding of B cells and T cells via the B7.1/CD28 pathway.

17. A method of treating a disease involving T cell/B cell interactions comprising administering an amount of a monoclonal antibody according to claim 4 sufficient to inhibit the binding of B cells and T cells via the B7.2/CD28 pathway.

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18. The method of claim 16 wherein said disease is an autoimmune disorder.

19. The method of claim 17 wherein said disease is an autoimmune disorder.

20. The method of claim 16 wherein said disease is selected from the group consisting of idiopathic thrombocytopenia purpura, systemic lupus erythematosus, type 1 diabetes mellitus, rheumatoid arthritis, psoriasis, aplastic anemia, inflammatory bile disease, allergy and multiple sclerosis.

21. The method of claim 17 wherein said disease is selected from the group consisting of idiopathic thrombocytopenia purpura, systemic lupus erythematosus, type 1 diabetes mellitus, rheumatoid arthritis, psoriasis, aplastic anemia, inflammatory bile disease, allergy and multiple sclerosis.

22. The method of claim 16 wherein said disease is graft-versus-host disease.

23. The method of claim 17 wherein said disease is graft-versus-host disease.

24. The method of claim 16 wherein said disease is selected from the group consisting of B cell lymphoma, infectious diseases, and inflammatory diseases.

25. The method of claim 17 wherein said disease is selected from the group consisting of B cell lymphoma, infectious diseases, and inflammatory diseases.

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26. A pharmaceutical composition suitable for treatment of a disease treatable by inhibition of B7:CD28 binding which comprises an antibody according to claim 1.

27. The method of claim 16 wherein the antibody is administered in combination with other recombinant protein or small molecule immunosuppressants.

28. The method of claim 17 wherein the antibody is administered in combination with other recombinant protein or small molecule immunosuppressants.

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